

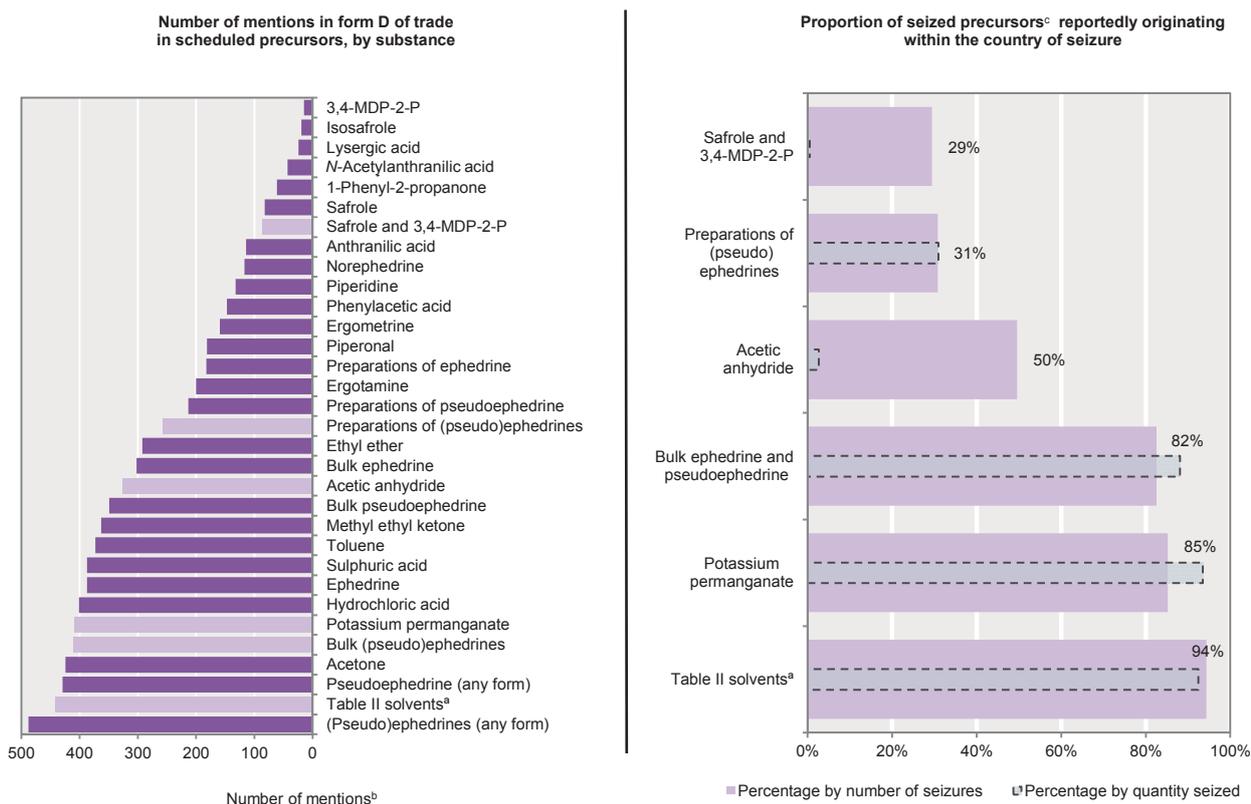
79. As at 1 November 2014, there were nearly 400 registered users, representing almost 200 agencies from 90 countries, and 8 international and regional agencies (see map 2). Almost 1,200 incidents have been communicated since the launch of PICS, involving 84 different countries and territories. Many of the incidents involve chemicals on the limited international special surveillance list and other non-scheduled chemicals, making PICS an essential tool in alerting law enforcement officials to emerging trends. **The Board commends the early and systematic sharing of available operational information via PICS so as to allow the building up of cases and alerting PICS users in other countries about modus operandi and new trends. Governments that have not yet registered PICS focal points for their relevant national authorities involved in precursor control, such as regulatory, law enforcement, customs and drug control agencies, are encouraged to do so without delay.**

IV. Extent of licit trade in precursors and the latest trends in precursor trafficking

80. The present chapter provides not only an overview of major trends and developments in licit trade in and trafficking of precursors, but also a review of major changes over the five-year period starting with the adoption of the Political Declaration and Plan of Action in 2009. As such, it aims to contribute to a better understanding of current challenges and the paradigm shift in the sourcing of precursors since 2009, and of the necessary actions, at the domestic, regional and international levels, which are outlined in chapter II.

81. The present chapter summarizes information on seizures and cases of diversion or attempted diversion from

Figure V. Extent of licit international trade in precursor chemicals compared with local sourcing for illicit purposes, 2009-2013



^a Acetone, ethyl ether, methyl ethyl ketone and toluene.

^b A mention is counted every time a country reports international trade in the substance. If a country reports trade in the same substance in multiple years, each mention is counted separately. In the case of aggregations of different substances (e.g., bulk (raw) ephedrine and bulk (raw) pseudoephedrine), if a given country in a given year reports trade in at least one of those substances, the mention is counted only once for that

^c Countries are requested to report on form D, on an annual basis, total seizures of each precursor and, additionally, a breakdown according to origin. This chart is based only on reports in which a complete breakdown was provided. Only substances for which the availability of data allows for a meaningful analysis are included.

international trade, as well as activities associated with illicit drug manufacture. The data have to be seen in the context of significant year-on-year variations in reported seizure data that occur as a result of inconsistent reporting by Governments and in the light of the fact that seizures of precursors generally reflect the results of large individual seizures and targeted regulatory and law enforcement initiatives, more than is the case for drugs. In addition, seizures of precursors are often the result of cooperation among several countries, and therefore, the occurrence and magnitude of seizures made in a given country should not be misinterpreted or overestimated in assessing that country's role in the overall precursor trafficking situation.

82. Several of the substances in Tables I and II of the 1988 Convention have widespread legitimate uses, and correspondingly large volumes of those substances are traded internationally (for a list of their common uses, see annex XI). The proportion of seized substances in Table I of the 1988 Convention is often small in comparison with international trade in those substances as reported by Governments. Domestic seizures, that is, seizures reported to have originated within the country of seizure and thus occurring outside the international precursor trade

monitoring system, represent a significant proportion of all seizures, ranging between 30 per cent and almost 95 per cent (by number), depending on the specific precursor or group of precursors in question (see figure V). Chemicals traded widely, such as Table II solvents, potassium permanganate and ephedrine and pseudoephedrine in bulk (raw) form tend to be seized more often from domestic markets than are substances whose international trade is more limited, such as safrole and 3,4-MDP-2-P.

83. On a regional basis, with the exception of East and South-East Asia, West Asia and Oceania, the reported origin of the large majority of seizures is within the same country reporting the seizure (see seizures reported as "domestic", in table 2). Seizures made in East and South-East Asia tend to be reported to have originated within that region or, to a lesser extent, from the neighbouring region of South Asia, while seizures made in West Asia are predominantly reported to have originated in that region or, to a lesser extent, in East and South-East Europe. Oceania is the only region where it is reported that a larger proportion of seizures originated in another region (East and South-East Asia).

Table 2. Seizures of precursor chemicals in Tables I and II, by reported origin, 2009-2013

Region of reporting (seizing) country	Reported origin (Percentage)										Number of seizures
	Domestic	Africa	Central and South America and the Caribbean	East and South-East Asia	Eastern and South-Eastern Europe	North America	Oceania	South Asia	Western and Central Europe	West Asia	
Africa	a	a	a	a	a	a	a	a	a	a	3
Central and South America and the Caribbean	99	–	0	0	–	0	–	0	–	–	1 196
East and South-East Asia	4	–	4	56	–	–	–	36	–	–	75
Eastern and South-Eastern Europe	69	0	–	0	23	0	–	0	6	2	1 555
North America	100	–	–	–	–	–	–	–	–	–	193
Oceania	24	1	0	44	0	17	0	2	10	1	3 112
South Asia	100	–	–	–	–	–	–	–	–	–	54
Western and Central Europe	88	–	0	1	1	2	–	3	4	1	693
West Asia	–	–	–	4	22	–	–	–	–	75	213

Notes: Only reports where a consistent breakdown of seizures was given are considered. Since different substances are considered together, the percentage is based on the number of cases, not the total quantity seized. A dash (–) indicates nil, while a small positive value may appear as 0 per cent (since percentages are rounded).

^a Insufficient data.

A. Substances used in the illicit manufacture of amphetamine-type stimulants

Substances used in the illicit manufacture of amphetamines

84. Many of the precursors that could be used in the illicit manufacture of amphetamines (i.e., amphetamine and methamphetamine) are widely traded internationally. During the reporting period, the authorities of 43 exporting countries used the PEN Online system to report almost 6,400 transactions involving shipments of substances in Table I of the 1988 Convention that are precursors of amphetamine-type stimulants, including one shipment of APAAN.

1. Ephedrine and pseudoephedrine

Licit trade

85. During the reporting period, exporting countries sent more than 5,000 pre-export notifications through the PEN Online system for shipments of ephedrine and pseudoephedrine, in bulk and in the form of pharmaceutical preparations. The notifications were for a total of more than 1,030 tons of pseudoephedrine and 130 tons of ephedrine. The ephedrine and pseudoephedrine shipments originated in 41 exporting countries and territories and were destined for 161 importing countries and territories.

86. After a protracted period, during which very few attempts at diversion from international licit trade were detected, a number of cases observed during the reporting period indicate that traffickers are still trying to source ephedrines through licit trade channels.

87. Several such shipments originated in India. In one shipment, 30 kg of pseudoephedrine were to be exported to Honduras, a country that has prohibited the importation of the substance since January 2009. After objecting through the PEN Online system, Honduras received from India all relevant documents to support their investigations.

88. In a similar case, Zimbabwe objected through PEN Online to a shipment of 75 kg of pseudoephedrine originating in India. The result of the investigation in Zimbabwe confirmed that the importer had not applied for an import authorization for the substance nor was authorized to trade in it. Another shipment originating in India, consisting of 150 kg of ephedrine intended for Uganda, was not allowed to proceed as Ugandan authorities clarified that no import authorization had been requested or issued. In both cases, India provided the relevant

documentation to the authorities in Zimbabwe and Uganda to support their investigations. **The Board reminds competent authorities to be aware that the names of legitimate companies may be misused by traffickers to source the substances for the illicit manufacture of drugs.**

89. The Democratic Republic of the Congo also received a pre-export notification for a shipment of 100 kg of ephedrine originating in India. As the company had not been known to have imported precursor chemicals previously, the Board requested the local law enforcement authorities to confirm the legitimacy of the company and of the order. According to the Congolese police, the given address was that of a warehouse in which no pharmaceuticals were being manufactured. The investigations are still ongoing.

90. In recent years, Egypt has become a major trader of pharmaceutical preparations, mainly destined for countries in Africa, but also in West Asia. In January 2014, Egypt sent a pre-export notification to Iraq for two consignments of pharmaceutical preparations containing pseudoephedrine amounting to 311 kg. The Iraqi authorities requested the shipments to be stopped, informing that no import authorizations had been issued for the company.

91. Another suspicious shipment involved 84 kg of pseudoephedrine in the form of a pharmaceutical preparation from Belgium to Kuwait. The Kuwaiti authorities informed the Board that the importing company had not ordered the substance. Since the European Union started using the PEN Online system to send pre-export notification of shipments of pharmaceutical preparations containing ephedrine or pseudoephedrine, an increasing number of shipments are being stopped through the system by importing countries on the basis of missing import authorizations.

92. Switzerland sent pre-export notification of an export of 125 kg of pseudoephedrine to Paraguay. After objecting to the consignment through PEN Online, the competent authorities of Paraguay informed the Board that the company was registered but not licensed to use the substance. The shipment was subsequently stopped.

93. In May 2014, a Canadian exporting company requested authorization to export ephedrine to Spain. The Canadian authorities sought support from INCB to establish contact with Spain in order to verify the legitimacy of the order. Spanish authorities provided the information that the importing company had links with another company that had been prosecuted in 2011 because of its involvement in illicit activities, namely the import of ephedrine from China and Canada for re-export to an unknown company in Morocco that allegedly was to repackage the substance, mislabel the containers and

misdeclare it at customs, to be re-exported to the Americas. The authorities of both countries are still conducting their investigations.

94. Viet Nam requested to stop a shipment of 500 kg of pseudoephedrine hydrochloride from Singapore. The notification to stop the shipment was sent through the PEN Online system.

Trafficking

95. Of the various precursors, seizures of ephedrines are arguably the most widespread: over the period 2004-2013, a total of 78 countries and territories registered seizures of ephedrine and/or pseudoephedrine (in bulk (raw) or in the form of a pharmaceutical preparation), of which 55 countries and territories made such seizures at least once in the period 2004-2008 and 71 countries and territories made seizures at least once from 2009 onwards. Among the latter group, the authorities of 18 of those countries and territories made such seizures in 2009 or later for the first time on record. Most countries reporting seizures of pseudoephedrine also reported ephedrine seizures. On the other hand, it was not unusual for countries to report seizures of ephedrine but not of pseudoephedrine (see figure VI). However, it cannot be excluded that the latter pattern simply reflects a tendency to indiscriminately categorize seizures of both substances as seizures of ephedrine.

96. In terms of both the number of reporting countries and the total quantities seized, seizures of ephedrine and pseudoephedrine peaked in 2009 (see figure VII), coinciding with special international operations focusing on those substances, and have remained significantly lower since that year.

97. North America and East and South-East Asia have long been the most prominent regions in terms of seizures of ephedrines. Over the period 2004-2008, these two regions together accounted for 90 per cent of global seizures of ephedrine and pseudoephedrine in bulk (raw), and North America alone accounted for more than two thirds of the total. Over the period 2009-2013, seizures of bulk ephedrines were more dispersed, with almost 40 per cent of the total quantity reported being seized outside those two regions. In relative terms, since 2009, seizures of ephedrines in bulk have shifted slightly from North America to the neighbouring regions of Central America and the Caribbean and South America and increased in other regions not previously associated with significant illicit methamphetamine manufacture or abuse, including South Asia and West Asia. Nevertheless, over the period 2009-2013, North America still accounted for over one third of seizures of ephedrines in bulk.

Figure VI. Number of countries and territories with recorded seizures of ephedrines, 2004-2013

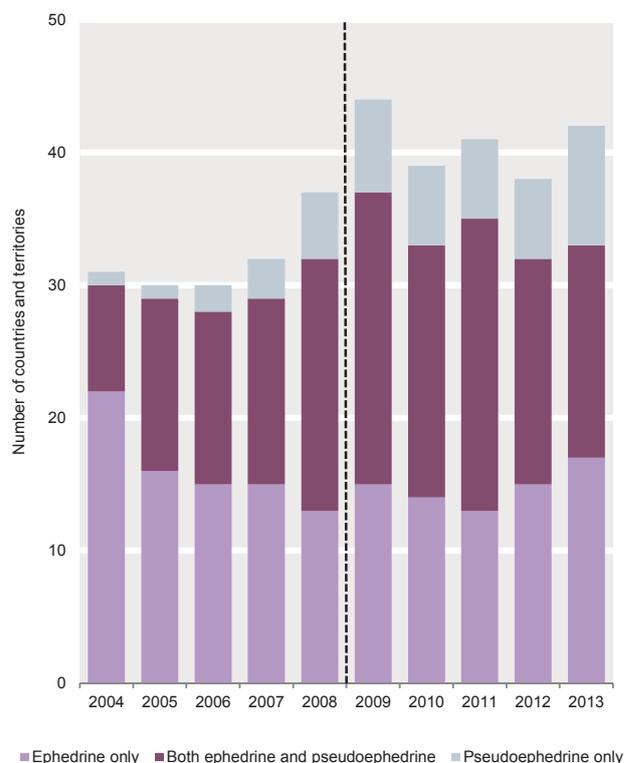
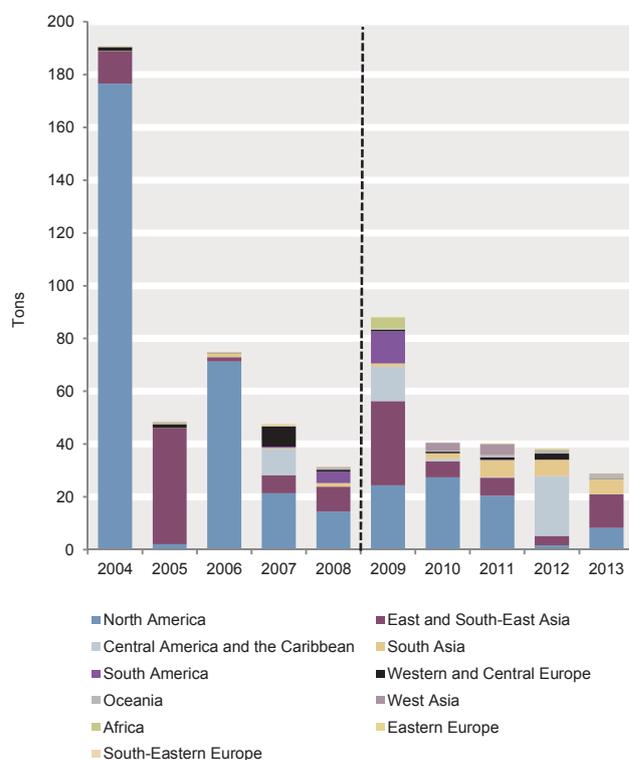


Figure VII. Global seizures of bulk (raw) ephedrine and pseudoephedrine, by region, 2004-2013



98. Ephedrine and pseudoephedrine are also widely seized in the form of pharmaceutical preparations. The average quantity²⁷ of ephedrine and pseudoephedrine preparations reported to have been seized annually over the period 2009-2013 was more than five-fold the average level over 2006-2008.²⁸

99. In the case of both preparations and substances in bulk, since 2009 there appears to have been an increased tendency to source ephedrines for illicit purposes locally rather than from other countries; among seizures in the period 2009-2013, the proportion of seizures that were identified by the reporting country as originating in its own territory increased from previous years, reaching 31 per cent in the case of preparations (up from 10 per cent prior to 2009) and 88 per cent in the case of substances in bulk (up from 75 per cent in the period 2004-2008). That may reflect an increased effectiveness in curtailing cross-border diversion.

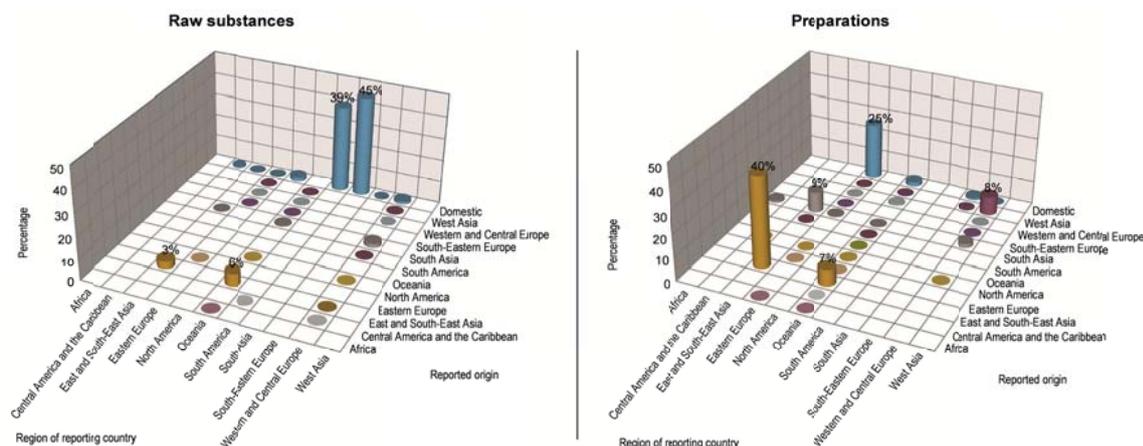
100. Even so, the available data suggest that the sourcing of preparations containing ephedrines for illicit purposes continues to be of a more international nature than sourcing of the bulk substances (see figure VIII); over the period 2009-2013, more than two thirds of seizures of preparations (by quantity) could be traced to a country other than the reporting

country. Nevertheless, even these seizures exhibited a shift towards more localized patterns: more precisely, from interregional to intraregional patterns. Based on total weight seized, prior to 2009, most such cases involved preparations that had been sourced from another region (notably seizures made in Oceania originating in East and South-East Asia), while in the period 2009-2013, the majority of seizures of ephedrines originating in another country were sourced from within the same region (notably between different countries within East and South-East Asia).

101. In 2013, 33 countries and territories reported seizures of ephedrine on form D, of which 21 reported seizures of ephedrine in bulk and 17 of ephedrine preparations. Pseudoephedrine seizures were reported by 25 countries and territories, including 15 reporting seizures of pseudoephedrine in bulk and 14 reporting seizures of pseudoephedrine preparations.

102. Globally, seizures of ephedrine and pseudoephedrine amounted to 43 tons, in addition to 1 million tablets of unknown net content. Seizures amounting to 1 ton or more were reported by 7 countries: Australia, China, India, Mexico, Ukraine, United Kingdom of Great Britain and Northern Ireland and United States.

Figure VIII. Breakdown of seizures of ephedrine and pseudoephedrine, 2009-2013, by region of reporting country and origin (when specified), bulk (raw) substances versus preparations



²⁷ Based only on instances where the available information allows for conversion into weight.

²⁸ Collection of data on seizures of pharmaceutical preparations containing ephedrine and pseudoephedrine only started as of the 2006 reporting cycle, pursuant to Commission on Narcotic Drugs resolution 49/3.

103. China reported seizures of 11 tons of bulk (raw) ephedrine, 5.7 tons of ephedrine preparations and 908 kg of bulk (raw) pseudoephedrine in 2013. In December 2013, a major operation was launched by the Chinese authorities in the village of Boshe, Lufeng, in Guangdong province, which led to the seizure of more than 3 tons of methamphetamine and about 100 tons of undisclosed chemicals. The key starting material for the manufacture of ephedrine was found to have been 2-bromopropiophenone, a substance that came under national control as of 12 May 2014.

104. Acting on a tip-off, authorities of the Philippines seized almost 250 kg of ephedrine in unlabelled plastic bags from a vehicle in Parañaque City. The origin or point of diversion of the substance is unknown.

105. During the reporting period, there was an increasing number of diversions or attempted diversions of ephedrines with connections to companies in West Africa. Since November 2013, three incidents involving ephedrine in Nigeria were communicated through PICS. In particular, in September 2014, 250 kg of ephedrine hydrochloride was legitimately imported into Nigeria from India by a company whose owner then proceeded to successfully divert 27 kg and attempted to sell a further 25 kg to a prospective buyer. The investigation resulted in the seizure of the remaining 223 kg of ephedrine. Nigeria also reported the seizure of additional illicit methamphetamine laboratories in 2014, bringing the total number of illicit laboratories and associated facilities known to have been dismantled in that country to seven.

106. In 2013, the Board received several letters from a company in Guinea-Bissau attempting to establish a new annual legitimate requirement for pseudoephedrine, to increase it from nil to 6,000 kg. Subsequent investigations confirmed that the company was registered but that there was no licit requirement for pseudoephedrine in the country and that no import authorization had been issued to the company. The Board alerted the main exporters of this substance—China and India—to that development and requested them not to export the substance without confirming the legitimacy of the order. A subsequent seizure of 300 kg of pseudoephedrine in Latvia in March 2014 was linked to the same company in Guinea-Bissau. The Latvian authorities initiated a formal investigation and have provided initial information to the Board. A Project Prism alert was issued informing all participants of this development.

107. In January 2014, the authorities of the United Kingdom suspended a shipment of 250 kg of ephedrine hydrochloride at the request of the competent authorities of Liberia. Another incident involved a barrel of 25 kg of ephedrine which went missing from a consignment sent from Denmark to Ghana, for which investigations are ongoing.

108. Aside from the illicit manufacture of methamphetamine, attempts to divert ephedrines in West Africa may also be intended for sale as medications on the illicit market. Côte d'Ivoire reported on its form D the seizure of about 1.3 kg of pharmaceutical preparations containing ephedrine from street vendors that sell those preparations without marketing approval. They are reportedly smuggled into Côte d'Ivoire by land from countries in the subregion.

109. The situation with precursors of amphetamine-type stimulants in the Islamic Republic of Iran continues to be unclear, with insufficient information provided to the Board to assess the situation. Despite the Board's concerns about relatively high estimated annual legitimate requirements, figures have remained unchanged since 2010. At the same time, the country continues to be affected by significant levels of abuse, trafficking and illicit manufacture of methamphetamine. In 2013, Iranian authorities dismantled 445 small-scale laboratories and seized almost 3.7 tons of methamphetamine, an increase on both counts compared with 2012. There are indications from chemical analysis conducted with the country that ephedrine or pseudoephedrine are typically used as the starting material²⁹ for illicit methamphetamine manufacture in that country.

110. The continued accessibility of pharmaceutical preparations containing ephedrine and pseudoephedrine to traffickers in South-East Asia is evidenced by seizures of such preparations. Myanmar, for example, reported in its form D to have seized more than 3.5 tons of pharmaceutical preparations containing pseudoephedrine and more than 130 kg of ephedrine preparations, reportedly originating in India and Thailand. Thailand reported seizing almost 300,000 pseudoephedrine tablets concealed in vehicles in Mae Sot district of Tak province, bordering Myanmar. All tablets were alleged to have originated in Turkey, similar to what occurred in the 2012 reporting cycle, when about the same number of tablets were reported to have originated in that country. Overall, however, 2013 marks the third consecutive year of decline, from more than 58 million tablets seized in 2010 to just under 300,000 tablets, a development that may be linked to stricter domestic controls following major irregularities reported in the Board's 2012 report on precursors.

111. Hong Kong, China, reported seizing 27 kg and almost 660,000 tablets containing pseudoephedrine, as well as similar amounts (by weight) of ephedrine and pseudoephedrine in bulk (raw) form. Many reported seizures of ephedrine and

²⁹ Ali Reza Khajeamiri and others, "Determination of impurities in illicit methamphetamine samples seized in Iran", *Forensic Science International*, vol. 217, Nos. 1-3 (April 2013), pp. 204-206.

pseudoephedrine bulk materials were made in outbound air consignments, mostly destined for Australia; some of the consignments were transiting through Hong Kong, China, from other points in China or India; one shipment was destined for Malaysia and one for New Zealand. In contrast, seizures of pharmaceutical preparations were made from the luggage of incoming air passengers, often from or via Doha; in addition, three seizures of pseudoephedrine preparations were made from the luggage of incoming and outgoing passengers at control points between Hong Kong, China, and other points in China.

112. Germany reported the seizure in 2013 of an incoming shipment from Pakistan of ephedrine tablets via air freight; similarly, the authorities of the United Kingdom reported seizing pseudoephedrine preparations originating in Pakistan.

113. Authorities in New Zealand reported a significant increase in seizures of pharmaceutical preparations containing pseudoephedrine, in comparison with previous years. Trafficking of such preparations, primarily in the form of ContacNT, continues to originate mostly in China, using as consignees residential addresses falsely claimed to belong to legitimate New Zealand companies. Large importations are increasingly common, and offenders apparently have no difficulty accessing those chemicals, as reflected in the fact that there is no discernible decline in the methamphetamine market. Authorities consider the use of the Pacific Ocean by organized criminal groups to move illicit drugs and precursors to be of high risk to New Zealand. Other chemicals and reagents needed for the illicit manufacture of methamphetamine appear to be sourced by means of various domestic diversion methods, including theft.

114. Although the presence of methamphetamine has now been detected in the illicit drug markets of several European countries, the Czech Republic remains the most prominent in the region in terms of illicit manufacture. Authorities of the Czech Republic reported the dismantling of 261 illicit methamphetamine laboratories in 2013. Most of them were small in scale, capable of producing up to 50 grams of methamphetamine in one batch. The chemicals found in these laboratories included non-scheduled chemicals such as red phosphorus, iodine, hydriodic acid, formic acid, as well as the Table II substances hydrochloric acid, sulphuric acid and toluene, all of which are assumed to have been sourced domestically.

115. Czech customs authorities reported seizing, in 70 instances occurring during 2013, almost 115,000 tablets containing pseudoephedrine that were smuggled into the country from Poland by land to be used in small-scale laboratories manufacturing methamphetamine for subsequent export (locally known as “crystal”). Ephedrine and pseudoephedrine have been used for many years in the illicit

manufacture of methamphetamine for domestic consumption as well as cross-border trafficking to neighbouring Austria, Germany and Slovakia. The Czech authorities have now observed a significant increase in the sophistication and the capacity of clandestine methamphetamine laboratories, often run by Vietnamese organized criminal groups. While pseudoephedrine hydrochloride used to be mostly extracted from domestically available pharmaceutical preparations, a change in legislation in 2009 limiting the amount that could be purchased at once to 900 milligrams (mg) resulted in a significant reduction in the misuse of such domestically diverted preparations. Now, most pharmaceutical preparations are smuggled into the country from abroad, mostly from Germany, Poland and Slovakia, and occasionally from Bulgaria and Turkey. Bulgarian authorities communicated through PICS several such incidents involving pharmaceutical preparations, which had often originated in Turkey. In some cases, tablets were removed from their original packaging and trafficked packed loose in nylon bags. Unlike Czech domestic products, pharmaceutical preparations smuggled into the Czech Republic often contain more than 30 mg (and up to 120 mg) of pseudoephedrine hydrochloride in one dosage unit (tablet).

116. In 2013, illicit methamphetamine manufacture was also identified in Bulgaria and Germany. Bulgaria reported dismantling 35 methamphetamine laboratories, often found on private premises and manufacturing methamphetamine for local distribution. German authorities dismantled five small-scale laboratories manufacturing methamphetamine from pharmaceutical preparations containing pseudoephedrine, a decrease compared with previous years. The laboratories were located in south-eastern federal states of Germany, neighbouring the Czech Republic. The pharmaceutical preparations were obtained in pharmacies in Germany.

2. Norephedrine and ephedra

Licit trade

117. International trade in norephedrine, a substance that can be used in the illicit manufacture of amphetamine, is low compared with trade in other precursors. During the reporting period, 10 countries sent notifications of exports of norephedrine to 29 importing countries, involving a total amount of 52 tons of norephedrine. The *Ephedra* plant is the natural source of ephedrine, both for legitimate manufacture as well as for use in illicit laboratories. The Board has on several occasions alerted Governments to the possible illicit use of ephedra and advised them to remain vigilant in that regard, but as the plant material is not under international control, there is no requirement to pre-notify exports of ephedra or ephedra-based products.

Trafficking

118. Although both norephedrine and ephedra have been found in illicit drug laboratories, such occurrences are unusual, accounting for a very small proportion of the substances found in such laboratories.

119. Seizures of norephedrine remain small and restricted to a small number of countries in comparison with other precursors used for the manufacture of amphetamine. Nevertheless, seizures of the substance appear to have become more frequent over the past decade. Over the period 2004-2013, 17 countries and territories registered seizures of norephedrine, of which only seven made such seizures prior to 2009. In 2013, only two countries reported norephedrine seizures—Australia and Ukraine—and the quantities involved did not exceed 1 kg.

120. The latest seizures of ephedra reported via form D relate to 2011. However, Chinese authorities reported a continuously worsening situation with regard to ephedra, despite the strengthening of regulations concerning the *Ephedra* plant, which made the harvesting or purchase of the plant for drug manufacture a criminal offence.³⁰

3. 1-Phenyl-2-propanone and phenylacetic acid

121. P-2-P is an immediate precursor in the illicit manufacture of amphetamine and methamphetamine and can itself be synthesized from phenylacetic acid. Non-scheduled esters of phenylacetic acid as well as other pre-precursors may be used to substitute for P-2-P and phenylacetic acid in illicit manufacture (see annex IV).

Licit trade

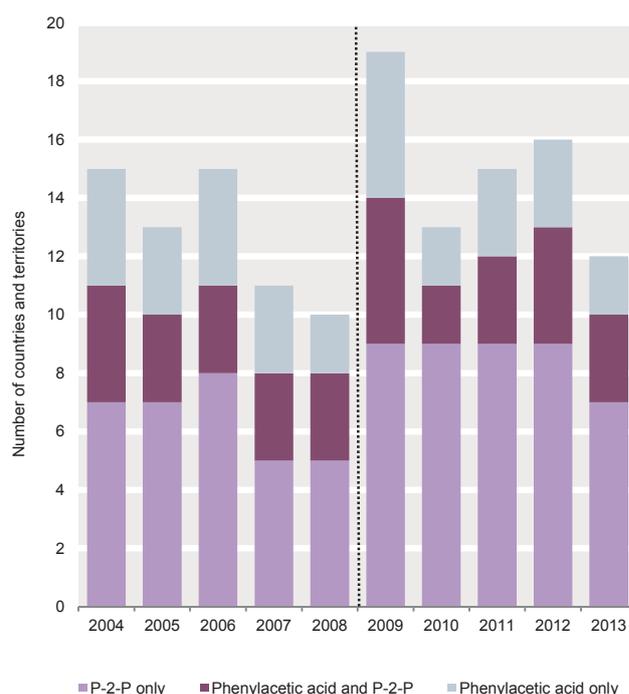
122. International trade in P-2-P is limited, with three quarters of Governments reporting that they had no requirements for P-2-P or had prohibited its import. During the reporting period, seven exporting countries sent pre-export notifications for 24 planned exports of P-2-P, amounting to almost 34,000 litres, via the PEN Online system to 12 importing countries. By contrast, licit trade in phenylacetic acid, an immediate precursor for P-2-P, is far more significant in terms of both the number of countries involved and the amounts traded. During the reporting period, 12 exporting countries sent, through the PEN Online system, 480 pre-export notifications for planned shipments of phenylacetic acid amounting to 1,000 tons, to 43 importing countries.

123. A planned shipment of a significant amount of P-2-P (9,850 litres) from India to the Syrian Arab Republic was stopped by the Indian authorities at the request—through PEN Online—of the importing country's authorities.

Trafficking

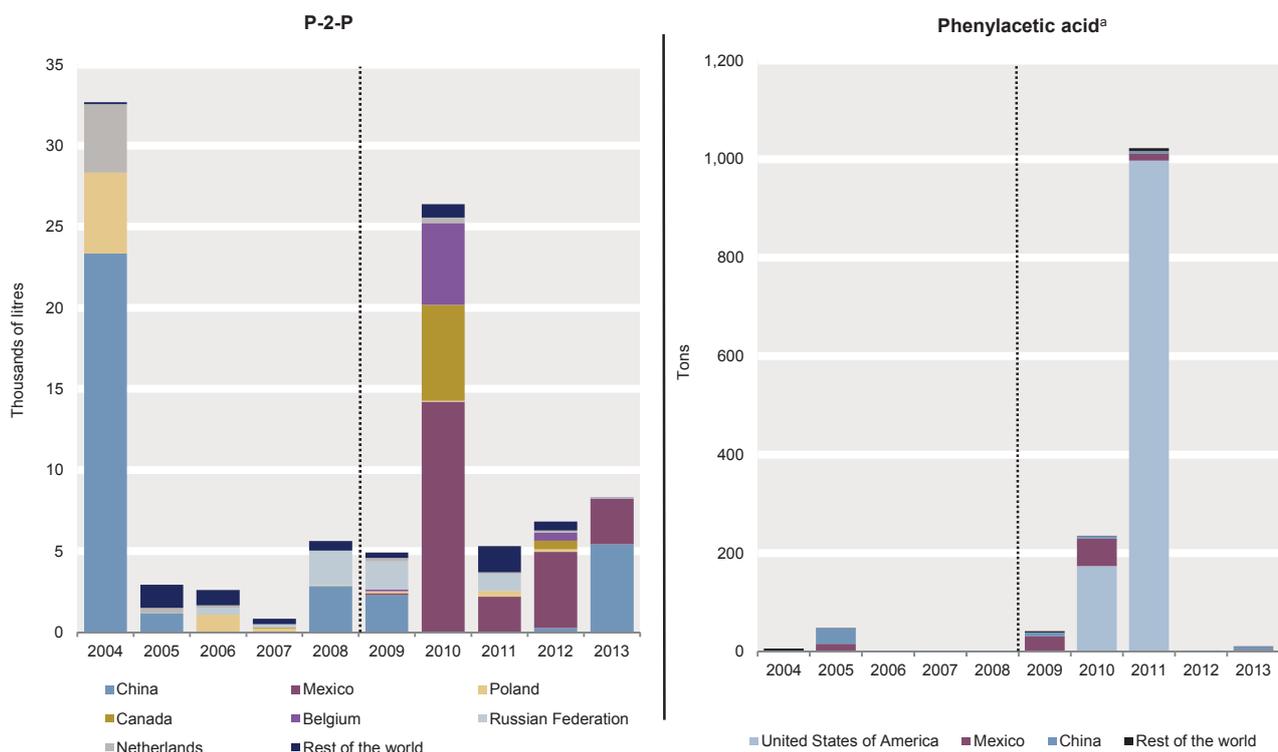
124. In some parts of the world, P-2-P-based methods have virtually replaced the use of ephedrines as the main starting materials for the illicit manufacture of methamphetamine. In addition, P-2-P has long been used in Europe for the manufacture of amphetamine. P-2-P itself has also increasingly been synthesized from phenylacetic acid (also a Table I substance) and from various non-scheduled chemicals, including the esters of phenylacetic acid and APAAN (see paras. 144-155).

Figure IX. Number of countries and territories with recorded seizures of phenylacetic acid and 1-phenyl-2-propanone (P-2-P), 2004-2013



³⁰ *Annual Report on Drug Control in China*, Office of China National Narcotics Control Commission, 2014, p. 53.

Figure X. Global seizures of 1-phenyl-2-propanone (P-2-P) and phenylacetic acid, 2004-2013



^a Seizures of phenylacetic acid may include esters and salts of phenylacetic acid.

125. However, seizures of P-2-P and phenylacetic acid remain less widespread than those of ephedrines. In the period 2004-2013, a total of 35 countries and territories registered seizures of P-2-P or phenylacetic acid, of which 28 countries and territories made such seizures at least once in the period 2009-2013. Among them, seven countries³¹ made seizures of these substances for the first time on record in 2009 or later.

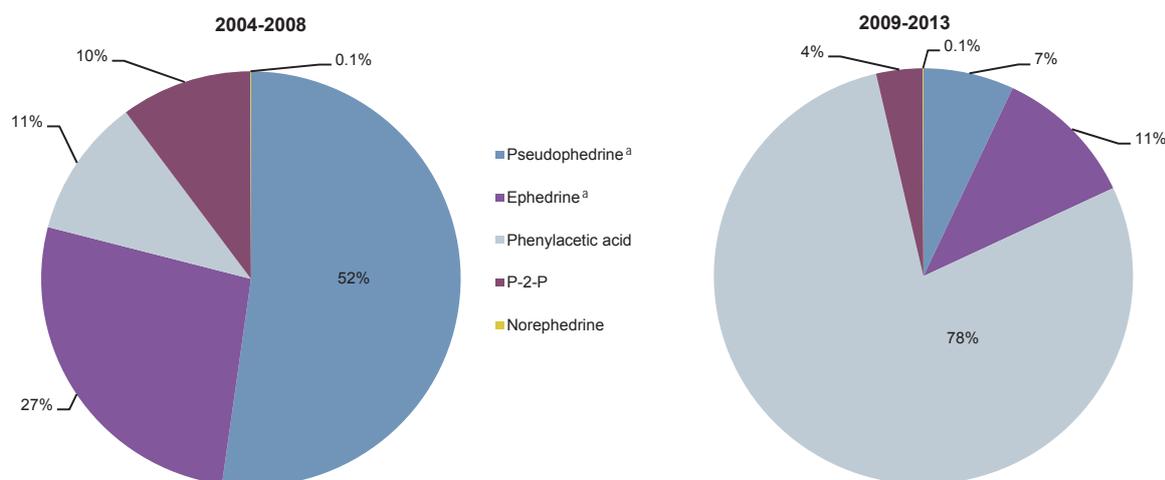
126. In terms of seized quantities, seven countries together accounted for 93 per cent of all seizures of P-2-P in the period 2004-2013 (China, Mexico, Poland, Canada, Belgium, the Russian Federation and the Netherlands, in that order). Seizures of phenylacetic acid, in spite of the larger volume of licit trade in that substance, were even more localized than for P-2-P, with three countries (notably, the United States, followed by Mexico and China) accounting for 99 per cent of all seizures of phenylacetic acid over the same period

127. Seizures of these substances were especially high around 2010-2011, a direct result of the increased focus on phenylacetic acid and its derivatives under Operation

Phenylacetic Acid and Its Derivatives (Operation PAAD).³² In particular, the quantity of phenylacetic acid seized in the period 2009-2011 corresponds to approximately three quarters of all seizures of scheduled precursors used in the manufacture of amphetamines in the period 2009-2013. This corroborates the results of forensic profiling of samples of methamphetamine seized in the United States, which have long provided strong evidence of the use of P-2-P-based methods.

³¹ Dominican Republic, Ecuador, Guatemala, Nicaragua, Philippines, Serbia and Syrian Arab Republic.

³² See *Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances: Report of the International Narcotics Control Board for 2011 on the Implementation of Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988* (United Nations publication, Sales No. E.12.XI.4).

Figure XI. Distribution of seized amphetamines precursors, periods 2004-2008 and 2009-2013

Note: In order to meaningfully compare the share of different substances, quantities are given equal weight whenever they yield the same approximate amount of amphetamine or methamphetamine.

^a Bulk and preparations.

128. Ten countries and territories reported seizures of P-2-P on form D in 2013, and five reported seizures of phenylacetic acid. The seized quantities of both substances were by far the largest in two countries: China and Mexico. After some years with none or just a couple hundred litres of seizures of P-2-P, China reported having seized in 2013 almost 5,500 litres of P-2-P and more than 6.5 tons of phenylacetic acid. Mexico reported seizures of 2,800 litres of P-2-P and 3,320 kg of phenylacetic acid. Bulgaria and Myanmar reported the next largest amounts of phenylacetic acid seizures: 97 kg and 95 kg, respectively. No other country reported seizures in excess of 50 litres of P-2-P or 50 kg of phenylacetic acid. The large quantity of P-2-P seized in China was linked to an investigation that detected an attempt to deliver P-2-P to Spain.

129. In the United States, which has a large market for methamphetamine largely supplied through trafficking across the border from Mexico, drug profiling data have indicated that, starting around 2010, the majority of methamphetamine seized in that country has been manufactured using P-2-P-based methods. By mid-2014, more than 95 per cent of the methamphetamine seized in the United States was being manufactured using P-2-P-based methods.

130. Although reports confirming the use of P-2-P-based methods in the illicit manufacture of amphetamines have so far largely been confined to North and Central America and Europe, indications have recently emerged of possible P-2-P-based manufacture, or attempts at such manufacture, outside those regions.

131. In China, the quantity of phenylacetic acid seized in 2013 was linked to the arrest of a suspect who was in the process of setting up a clandestine laboratory. In India, more than 20 litres of P-2-P were seized from a clandestine laboratory in March 2014. In a separate incident in India, almost 60 litres of P-2-P (as well as other chemicals) were seized, in May 2014, in conjunction with a seizure of 3.35 kg of methamphetamine. However, seizures of P-2-P in India were in addition to, not in place of, seizures of ephedrine and pseudoephedrine. During the first seven months of 2014, India destroyed five facilities manufacturing amphetamine-type stimulants, from which 155 kg of amphetamine and 162 kg of ephedrine and pseudoephedrine (as well as other substances) were seized.³³

132. Further indications that methamphetamine manufactured using P-2-P-based methods is spreading emerge from the drug profiling data of Australia, where the proportion of the analysed methamphetamine samples seized at the border that were manufactured using P-2-P-based methods increased from about 6 per cent in 2010 to more than 25 per cent in the first six months of 2013. As the inverse of that trend, the proportion of analysed border seizures that were classified as having been manufactured using ephedrine or pseudoephedrine decreased from more than 80 per cent to less than 75 per cent during the same period. Consignments seized as they reach the Australian border continue to have numerous countries of departure, notably countries of South-East Asia and North America. A move away from methods based on the use of ephedrine and pseudoephedrine towards P-2-P-based methods was also seen from methamphetamine

³³ Narcotics Control Bureau India (Drug Situation Report and National Drug Enforcement Statistics, July 2014).

samples seized domestically in Australia in the period 2010-2013, albeit still at low levels.³⁴

Substances used in the illicit manufacture of 3,4-methylenedioxyamphetamine and its analogues

1. 3,4-Methylenedioxyphenyl-2-propanone and piperonal

133. 3,4-MDP-2-P is an immediate precursor in the illicit manufacture of 3,4-methylenedioxyamphetamine (MDMA) and other “ecstasy”-type substances and can itself be manufactured from piperonal, safrole or isosafrole (see annex IV). Several non-scheduled derivatives of 3,4-MDP-2-P have increasingly been available in recent years, most of which also require piperonal in their manufacture.

Licit trade

134. The licit trade in 3,4-MDP-2-P is small and limited to just a few countries. Only four Governments report a legitimate need for the import of 3,4-MDP-2-P of more than 1 kg per year (see annex II). In the reporting period, no pre-export notification for a shipment of 3,4-MDP-2-P was sent through the PEN Online system. The international trade situation for piperonal is quite different. Sixteen exporting countries used the PEN Online system to send pre-export

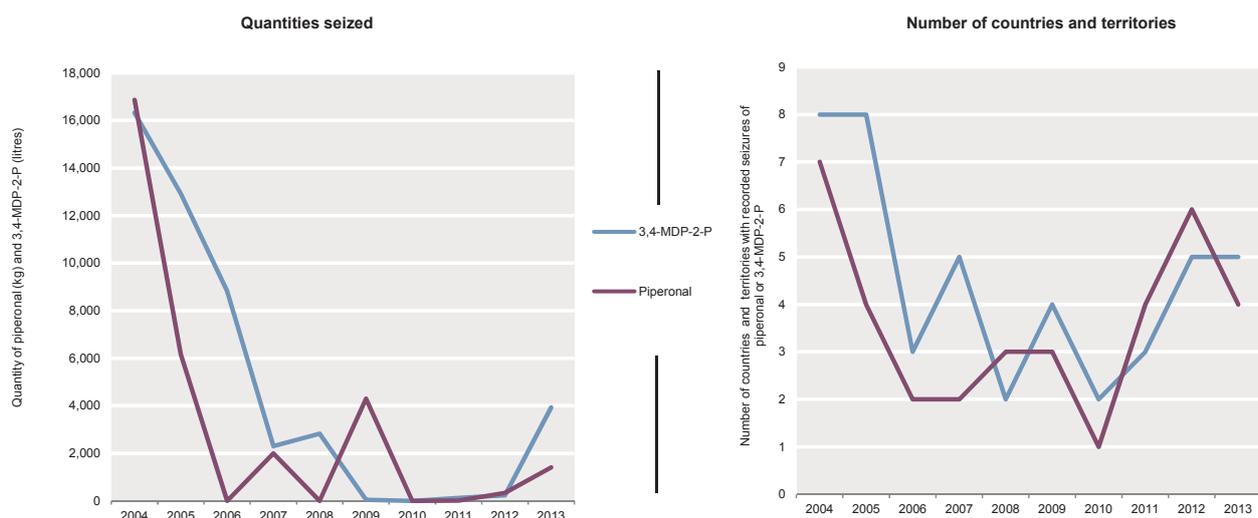
notifications for 627 shipments totalling almost 2,400 tons to 49 importing countries during the reporting period.

Trafficking

135. In the period 2004-2013, 31 countries and territories registered seizures of 3,4-MDP-2-P or piperonal, of which 22 countries and territories made such seizures at least once in the period 2009-2013, including 7 countries (Austria, Belarus, Nicaragua, Philippines, Portugal, Serbia and Slovenia) that in that period made their first recorded seizure of those substances.

136. Seizure data for 3,4-MDP-2-P recently made available corroborate earlier evidence pointing to a rebound in the availability of that substance, following an apparent shortage around 2010. Despite the fact that piperonal could in principle serve as an alternative to 3,4-MDP-2-P as a starting point for the manufacture of MDMA, seizures of 3,4-MDP-2-P and piperonal followed quite similar trends in terms of both the number of countries reporting such seizures and the quantities seized. One possible explanation could be that the illicit supply of 3,4-MDP-2-P was itself dependent on the supply, licit or otherwise, of the more widely traded piperonal, which can be used to synthesize 3,4-MDP-2-P. Alternatively, given the challenges that some of the emerging derivatives of 3,4-MDP-2-P, namely salts of 3,4-MDP-2-P methyl glycidic acid, may pose regarding their identification, a proportion of such seizures may have been incorrectly identified as mixtures of 3,4-MDP-2-P and piperonal.

Figure XII. Global seizures of 3,4-methylenedioxyphenyl-2-propanone (3,4-MDP-2-P) and piperonal, 2004-2013



137. Five countries (Austria, Belgium, China, Netherlands and Slovenia) reported seizures of 3,4-MDP-2-P on form D for the 2013 reporting cycle, and four countries (Australia, Hungary, Romania and Spain) reported seizures of piperonal,

³⁴ Australian Crime Commission, *Illicit Drug Data Report 2012-13*.

amounting to a total of 3,930 litres of 3,4-MDP-2-P and 1,400 kg of piperonal.

138. Belgium and Slovenia reported the largest quantities of 3,4-MDP-2-P seized in 2013. Belgium made three seizures amounting to more than 2,700 litres, of which two, accounting for almost the entire amount, were reported to have originated in China. Slovenian authorities reported a seizure of more than 900 litres of 3,4-MDP-2-P; details communicated via PICS indicate that the confiscation was made at the port of Koper and that the substance was seized from a container in transit from China to the Netherlands.

139. With regard to piperonal, Spain reported six seizures of the substance in 2013, accounting for almost the entire aggregate quantity reported for this reporting period. In May 2014, Spanish authorities seized two laboratories manufacturing synthetic drugs, including one manufacturing MDMA (commonly known as “ecstasy”). In March 2013, small amounts of MDMA had already been seized from another laboratory in Spain manufacturing amphetamine. However, there is no evidence to link these laboratories directly to the seizures of piperonal.

2. Safrole, safrole-rich oils and isosafrole

Licit trade

140. During the reporting period, pre-export notifications were sent via PEN Online for 29 shipments of safrole, including in the form of safrole-rich oils, with a total volume

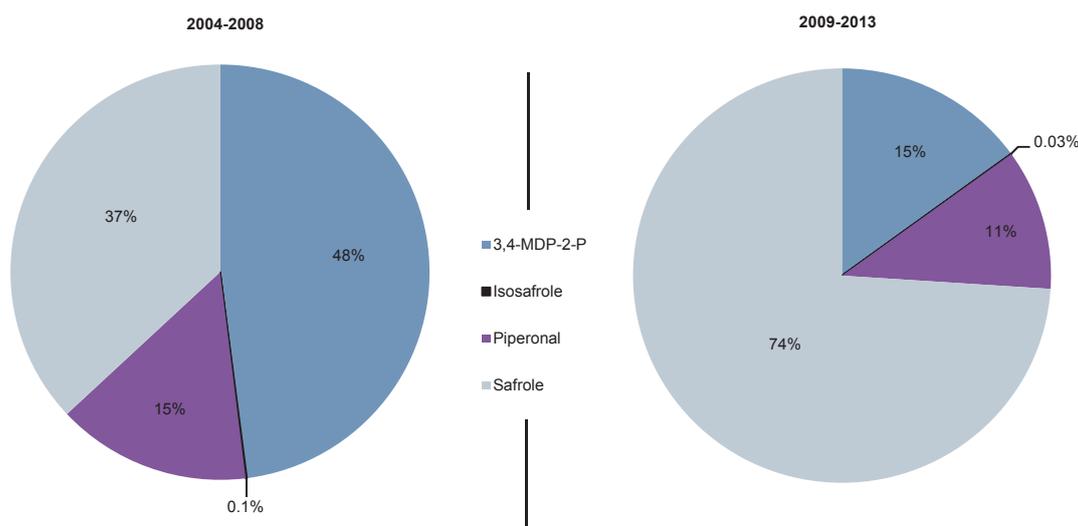
of slightly over 4,500 litres, being sent from six exporting countries to twelve importing countries. That is about the same international trade situation as in 2012 and 2013, but represents a significant decline from just two years ago. Trade in isosafrole is even more limited, with only one shipment of 1 litre of isosafrole having been notified via PEN Online during the reporting period.

Trafficking

141. Over the period 2004-2013, 24 countries and territories made seizures of safrole or isosafrole, of which 14 made such seizures at least once over the period 2009-2013, including 5 countries (Cambodia, Indonesia, Malaysia, Mexico and New Zealand), which registered such seizures for the first time in 2009 or later. The quantities of seized isosafrole, an intermediate in the synthesis of MDMA from safrole, were consistently negligible compared with the quantities of safrole seized. Although some countries in South-East Asia, notably Indonesia and Malaysia, have been associated with illicit MDMA manufacture in the past, the recent emergence of safrole seizures in the region is also linked to shipments intended for countries outside the region.

142. Both the number of countries and territories registering seizures of safrole and the quantity seized rose abruptly in 2011; large quantities were also seized in 2013. The quantity of safrole seized in the period 2009-2013 comprised almost three quarters of all seizures of scheduled precursors used in the manufacture of MDMA in that period.

Figure XIII. Distribution of seized precursors of 3,4-methylenedioxymethamphetamine (MDMA, commonly known as “ecstasy”), 2004-2008 versus 2009-2013



Note: In order to meaningfully compare the share of different substances, quantities are given equal weight whenever they yield the same approximate amount of MDMA.

143. Despite the apparent rebound in the availability of 3,4-MDP-2-P, use of safrole may not have receded. Five countries (Australia, Indonesia, Lithuania, Netherlands and United States) reported seizures of safrole or safrole-rich oils on form D for the 2013 reporting period, amounting to a total of more than 14,000 litres. The largest quantity by far was seized by the Netherlands (13,800 litres), which was also the only country to report seizures of isosafrole (10 litres). Seizures reported on form D were largely confirmations of seizures that had been communicated at the time of their occurrence through PICS and also included seizures of safrole in the form of safrole-rich oils carried out by authorities in Indonesia, with links to Australia and the United States. Seizures of safrole and safrole-rich oils continued to be communicated through PICS in 2014, including one seizure of 150 litres of brown camphor oil in Australia. **The Board commends those PICS users that communicate relevant incidents of precursor chemicals through the system to alert their counterparts of relevant trafficking cases, modi operandi and emerging trends, and encourages countries that do not yet have access to the system to register as soon as possible.**

Use of non-scheduled substances and other trends in the illicit manufacture of amphetamine-type stimulants

1. Pre-precursors for amphetamine and methamphetamine

144. APAAN seizures continued to be made in Europe, with almost 5.4 tons reported seized in seven instances in Belgium, including 5.12 tons reported to have originated in China; more than 1 ton in Estonia and about 180 kg in Lithuania. Four and a half tons of APAAN were reported to have been seized from a storage place in Germany; the substance seized had originated in China and was intended to be sent to the Netherlands. German authorities also reported several large-scale shipments from China that transited Germany en route to neighbouring countries. However, due to the lack of relevant legislation in 2013, German customs authorities were not able to seize the consignments and were thus only able to inform their counterparts in the destination countries. That changed in 2014, after APAAN became a controlled chemical in the States members of the European Union,³⁵ when 5 tons of APAAN were reported to have been seized from a container

at the seaport of Hamburg that had been misdeclared to the customs authorities.

145. The largest seizures worldwide in 2013 continued to be made by the authorities of the Netherlands, totalling more than 36 tons in 54 incidents. Romanian customs authorities reported seizing 600 kg from China en route to the Netherlands, while 25 kg were seized at a local residence and were also allegedly destined for the Netherlands. Poland reported the dismantling of a clandestine laboratory in which APAAN was converted into P-2-P and 1,400 litres of that precursor were recovered. A small amount of APAAN was also reported seized in France. In March 2014, Bulgaria communicated via PICS the seizure of almost 1 ton of APAAN, misdeclared as soluble dyes, found on a truck entering Bulgaria from Turkey.

146. Chinese authorities, in cooperation with counterparts in countries concerned, reported having prevented the export of seven shipments totalling almost 13.5 tons of APAAN in 2013,³⁶ despite the chemical not having been under national control until May 2014. For 2014, information on APAAN incidents communicated via PICS suggests that an increasing number of seizures of APAAN now appear to be made in illicit laboratories, possibly of previously acquired stocks.

147. Esters of phenylacetic acid also continue to be seized. Belize reported the seizure in 2013 of a consignment consisting of more than 800 litres of ethyl phenylacetate and more than 625 litres of acetic anhydride (which is required in the conversion of the esters into P-2-P), as well as other unidentified chemicals, indicating that following the peak in seizures under Operation PAAD in 2011, pre-precursors for phenylacetic acid and P-2-P continue to be trafficked into the Central American region.

148. Similarly, authorities in Mexico—where derivatives of phenylacetic acid have been under national control since November 2009—reported having seized, in 2013, 520 kg and more than 12,000 litres of ethyl phenylacetate and almost 8 tons of 2-phenylacetamide (a pre-precursor of phenylacetic acid that has already been monitored as part of Operation PAAD). Mexico also reported seizures of almost 3.5 tons of tartaric acid, a chemical required to purify methamphetamine that is manufactured using P-2-P-based methods to reach potency levels similar to those obtained when starting from ephedrine and pseudoephedrine. In 2013, seizures reported by Mexican authorities were all made in clandestine laboratories and none were made at the border, suggesting that those chemicals were already stocked in the country and/or are diverted from domestic distribution channels.

³⁵ As of 30 December 2013, APAAN has been a controlled chemical in the States members of the European Union, and the substance has been under international control since 9 October 2014.

³⁶ *Annual Report on Drug Control in China*, Office of China National Narcotics Control Commission, 2014.

149. Seizures of esters of phenylacetic acid also continued to be communicated via PICS in 2014. Authorities in Mexico seized more than 10 tons and 20,000 litres of ethyl phenylacetate in two seizures. Both seizures were made in the interior of Mexico—one amount buried in the area of a farm and the other seized from a truck on an interior road—and not at border crossings, as had often been the case in the past.

150. With respect to other non-scheduled chemicals, German authorities dismantled a trafficking organization that had ordered, by means of a front company, larger amounts of formamide and sulphuric acid in Germany and APAAN in China for the illicit manufacture of amphetamine base in the Netherlands and the final conversion of the base into amphetamine sulphate in Germany. German authorities also dismantled four illicit small-scale “kitchen” laboratories manufacturing amphetamine and/or methamphetamine from benzaldehyde and nitroethane. The chemicals were allegedly sourced from regional chemical traders as such or in the form of common commercial products, from which they were extracted. Small amounts of benzaldehyde and nitroethane were also reported seized from illicit amphetamine laboratories in the Russian Federation; the reported source of the chemicals was India.

151. During the routine control of a car, German authorities seized 4 kg of chloropseudoephedrine, an intermediate in the illicit manufacture of methamphetamine. Investigations into the case are ongoing; Czech and Dutch authorities have also since reported seizures of the substance.

152. Small quantities (less than 500 grams) of 1-phenyl-2-nitropropene, an intermediate in the manufacture of amphetamine and, via P-2-P, also of methamphetamine were reported seized in the Netherlands. Similarly, 3-oxo-2-phenylbutanamide, another intermediate in the manufacture of P-2-P, was also seized in the Netherlands, totalling 75 kg. The Netherlands also seized sizeable amounts of chemicals that suggest the continued employment of the reductive amination method for the manufacture of amphetamine. The same chemicals, formamide (almost 850 kg) and formic acid (10 litres), were also reported seized in Poland. Twenty-two tons of formic acid were also seized in Peru but no further details were provided.

153. Internationally non-controlled chemicals seized in China included more than 280 kg of 2-bromopropiophenone, a known intermediate in the manufacture of ephedrine and pseudoephedrine and a class 1 controlled precursor in China starting in May 2014, as well as almost 15 tons of thionyl chloride, a chemical required in a manufacturing method for methamphetamine commonly seen in South-East Asia. Thionyl chloride is listed on the limited international special surveillance list.

154. The authorities of the United States reported a number of chemicals that suggest various manufacturing methods based on ephedrine or pseudoephedrine. Reagents used in various illicit manufacturing methods for amphetamine and methamphetamine were also reported to have been seized by several countries, including red phosphorus, iodine, hydriodic acid and hypophosphorous acid. They are assumed to have been sourced domestically as several of them are widely available for different household purposes.

155. As incidents involving non-scheduled chemicals continue to occur, the Board wishes to emphasize once again the importance of early communication of suspicions or concerns about a shipment or even an order, even if the substances are not scheduled nationally. Such communications alert the authorities of other countries about the modus operandi used, thus allowing a case to be built and/or action to be taken against similar shipments in the future. In addition, early communication about a new substance not previously encountered in a jurisdiction may help to establish or confirm emerging trends and contribute to the development of countermeasures. Governments are reminded that it is important to communicate via PICS incidents involving chemicals that are not currently under international control and to use form D each year to provide aggregated data on seizures of precursor chemicals.

2. Methylamine

156. Methylamine is a key chemical in a number of illicit methods for manufacturing drugs such as methamphetamine and MDMA, ephedrine and several non-scheduled new psychoactive substances, especially of the synthetic cathinone family. Methylamine incidents were reported by several countries in 2013: 46 tons were seized in the container port of Antwerp, Belgium, reported to have originated in China and transited Guatemala. Germany reported two cases in which nationals of the Netherlands tried to source a total of 1.16 tons of methylamine from German chemical companies; in both cases the substance was not delivered. Seizures amounting to more than 1,000 kg or 1,000 litres were also reported by the Netherlands and Mexico. The amounts reported seized in Mexico represent a significant decline from the amounts reported seized a few years ago. It also appears that most of the seizures were in the interior of the country, in illicit laboratories, and not seizures made at the border, suggesting local smuggling or local availability of stocks. Small methylamine seizures were also reported by the authorities of Malaysia and the United States. Seizures of methylamine continued to be communicated via PICS in 2014.

3. Pre-precursors for 3,4-methylenedioxyamphetamine (MDMA) and related “ecstasy”-type drugs

157. Derivatives of 3,4-MDP-2-P methyl glycidic acid continued to be seized in Europe in 2013, including the methyl ester and the sodium salt of the substance. Shipments were typically destined for the Netherlands, often transiting several European countries. Seizures of one or more of those derivatives were reported on form D by Germany, the Netherlands, Romania and Slovakia; some of the seizures were made in the framework of controlled deliveries often involving law enforcement agencies from several countries. For example, almost 1.2 tons were seized in Slovakia as part of a controlled delivery of a shipment sent from Romania that transited Hungary. A subsequent search of a warehouse provided indications that the total amount could have been more than 8 tons; the alleged origin was China and the final destination was the Netherlands.

158. In October 2013, Chinese authorities stopped a consignment of 1.5 tons of 3,4-MDP-2-P methyl glycidate to a company in Spain after two earlier shipments amounting to 3,000 kg had allegedly been delivered. Subsequent international investigations involved seven countries: Bulgaria, China, Latvia, Netherlands, Spain, Switzerland and Ukraine. It is suspected that the same Spanish company was also involved in the importation of APAAN in order to export it once again to different European countries; the two proprietors of the company were from Belgium and the Netherlands.

159. Seizures of those substances continued in 2014, with incidents involving 4 tons communicated via PICS. Some of those seizures were the results of investigations that had started almost a year earlier, based on information shared by the Chinese authorities about shipments from a Chinese company that is being investigated for illicit activities related to controlled drugs and new psychoactive substances.

160. Chinese authorities also sought the Board’s assistance in relation to a case in which a Ukrainian company had tried to source a large amount of a related non-scheduled chemical on a regular basis. Ukrainian authorities subsequently reported that the company did not exist and that the address given was fictitious. As demonstrated by that case, **the Board would like to emphasize once again the importance of close cooperation with the private sector in order to solicit information about suspicious orders in a timely manner. The Board would also like to remind competent national authorities of the limited international special surveillance list of non-scheduled substances as a tool for use in cooperation with the industries concerned.**

161. In 2014, the Board conducted a survey about non-scheduled chemicals for use in illicit drug manufacture. Helional, an unusual precursor of MDA and possibly MDMA, was mentioned by several Governments. In May 2014, Dutch authorities communicated a seizure of 800 litres of helional via PICS, from a clandestine warehouse; more than 500 kg of APAAN were also seized in that incident.

B. Substances used in the illicit manufacture of cocaine

1. Potassium permanganate

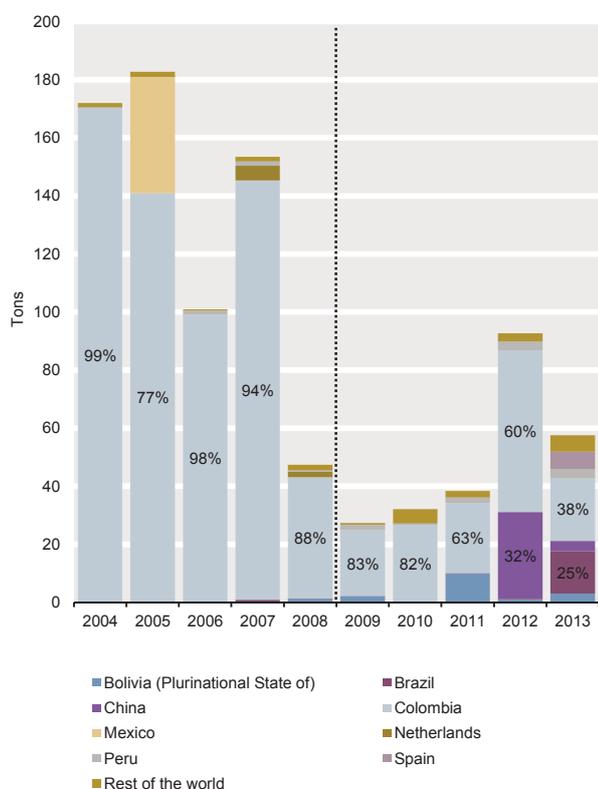
162. Potassium permanganate is an oxidizing agent used in the illicit manufacture of cocaine. Based on estimates of cocaine manufacture, a minimum of 180 tons of the substance are required annually in illicit cocaine manufacture in coca-producing countries. Potassium permanganate is also one of the most commonly internationally traded substances in Table I of the 1988 Convention. However, coca-producing countries are involved in only a limited proportion of that trade. At the same time, and despite the fact that alternatives to potassium permanganate are available, a significant proportion of global seizures of potassium permanganate continue to be reported by those countries (see figure XIV below). Diversion from domestic distribution channels and subsequent smuggling into illicit channels, as well as illicit manufacture of potassium permanganate, are known to occur.

Licit trade

163. During the reporting period, 1,630 shipments of potassium permanganate, totalling 27,500 tons, were reported through the PEN Online system. Thirty-one countries sent notification of planned exports of potassium permanganate to 123 countries. The three coca-producing countries in South America—Bolivia (Plurinational State of), Colombia and Peru—continue to engage in low levels of international trade in potassium permanganate, accounting for less than 1 per cent of the global imports for which notification was sent through the PEN Online system.

Trafficking

164. Over the period 2004-2013, a total of 44 countries and territories reported seizures of potassium permanganate, of which 31 made such seizures at least once in the period 2009-2013. Eight countries that made seizures of potassium permanganate in the period 2009-2013 were doing so for the first time on record: Canada, Chad, France, Pakistan, Philippines, Poland, Qatar, and Slovenia.

Figure XIV. Global seizures of potassium permanganate, 2004-2013

165. Global potassium permanganate seizures have always been dominated by seizures made in Colombia. However, overall seizure levels have been significantly lower in the past five years compared to the period prior to 2009. At the same time, recent seizures have been reported by an increasingly diverse number of countries.

166. In 2013, 17 countries and territories reported seizures of potassium permanganate, amounting to a total of 58 tons. Seizures in excess of 1 ton were reported by eight countries: Colombia (22 tons), Brazil (15 tons), Spain (5.9 tons), Paraguay (3.7 tons), China (3.5 tons), Plurinational State of Bolivia (3.1 tons), Peru (2.8 tons) and Qatar (1.6 tons). Eighty per cent of global seizures of potassium permanganate were made in countries in South America, including the three coca-producing countries: Bolivia (Plurinational State of), Colombia and Peru.

167. Colombia has traditionally also reported seizures of potassium permanganate in the form of solutions, often seized at illicit processing sites. Colombian authorities have indicated that this trend continued in 2013. However, they did not provide the amount of potassium permanganate seized in that form as laboratory analysis of the seizures was ongoing. Colombia also continued to detect and dismantle laboratories manufacturing potassium permanganate. However, with only

three such detections in 2013, there has been a significant decrease from previous years.

168. The results of forensic profiling of cocaine samples from cocaine seizures in the United States indicate that the use of oxidizers such as potassium permanganate in illicit cocaine processing reached an all-time high in 2013, after more than 10 years of continuous increase. The proportion of cocaine found to be highly oxidized exceeded 95 per cent in 2013.³⁷

169. In recent years, other countries have also reported seizing significant quantities of potassium permanganate. The quantities seized in Bolivia (Plurinational State of) in 2011 and 2013 and in Peru in 2011 and 2013 were the highest for those countries since 1990. In February 2014, Peruvian police seized an unspecified amount of potassium permanganate from a clandestine laboratory in the Ucayali region manufacturing cocaine, found along with coca leaf (800 kg) and cocaine (8 kg), as well as other chemicals, including sulphuric acid and calcium hydroxide.

170. The quantity of potassium permanganate seized in Brazil in 2013 was the highest annual amount on record for that country, equivalent to one quarter of the global total for that year. However, Brazilian authorities pointed out that seizures made in the course of monitoring trade establishments, some of which may have had irregular dealings in controlled substances, were not necessarily all linked to trafficking or illicit cocaine manufacture.

171. The Board was made aware of a seizure of potassium permanganate from a truck on a highway connecting Paraguay to Bolivia (Plurinational State of) in January 2014. The truck was also carrying other chemicals (including acetone, hydrochloric acid and sulphuric acid) concealed in a load of manioc starch. The driver did not have authorization to transport the controlled substances; investigations also revealed a likely previous consignment to the same consignee in Santa Cruz de la Sierra, Plurinational State of Bolivia. The labels on the seized barrels indicated that Brazil was the origin of the potassium permanganate. Further inquiries by the Board suggested that the substance was legitimately exported from Brazil to Paraguay where it was subsequently diverted. The case is being followed up with the Paraguayan authorities.

172. Over the period 2004-2011, China reported seizures of potassium permanganate only sporadically and of small quantities. However, China reported seizing unusually large quantities of potassium permanganate in 2012 (29.9 tons—the largest amount on record for the country) and 2013 (3.5 tons), but provided no details relating to this development. There are no indications, however, that the seized potassium

³⁷ United States Drug Enforcement Administration Special Testing Laboratory, Cocaine Signature Program, 2013 and previous years.

permanganate was intended for onward smuggling for use in illicit cocaine processing.

173. Following the detection of a small plantation of coca bush in Panama in 2013, another plantation was discovered in September 2014 in south-west Mexico, close to the border with Guatemala—the first such instance outside South America or Central America and the Caribbean known to the Board. **The Board wishes to reiterate its warning to countries in the region about the increasing number of incidents involving illicit cocaine manufacture in the region and the need to increase efforts to counter the illicit manufacture of that drug before it takes root.**

2. Use of non-scheduled substances and other trends in the illicit manufacture of cocaine

174. Seizures reported by coca-producing countries of most of the acids and solvents in Table II of the 1988 Convention have fluctuated significantly in recent years, but overall, there was a long-term decrease over the past decade. That is partly attributable to the fact that solvents are increasingly being recycled and reused several times but also due to changes in illicit processing practices. Specifically, an increase in the direct use of alcoholic hydrochloric acid, without any additional solvent, significantly reduces solvent requirements. Forensic analysis of seized cocaine originating in Colombia during 2013 suggests that more illicit cocaine hydrochloride laboratories are using significantly reduced amounts of the required solvents for processing, reflected in a majority of samples (52 per cent) that had been processed without mixing the hydrochloric acid with any solvent prior to adding it to the solvent/cocaine base mixture. The proportion of such samples is up from 35 per cent in 2009.³⁸

175. Twenty-seven countries and territories reported on form D seizures of Table II solvents in 2013. The Plurinational State of Bolivia reported seizures of more than 220,000 litres of solvents used in the last step of crystallization of cocaine hydrochloride, including almost 150,000 litres of acetate solvents, indicating use of processing methods seen in Colombian-run laboratories. Bolivian authorities also reported multi-ton seizures of those solvents, known to be used in the extraction of cocaine from coca leaves, as well as chemicals used in various steps of cocaine processing.

176. Colombia reported seizures of a variety of chemicals used in the processing of cocaine that are controlled domestically but not internationally. They included solvents both for the extraction of cocaine base from coca leaves and for the conversion of base into hydrochloride, including almost 7,000 litres of acetate solvents (ethyl and isopropyl acetate). Seizures in 2013 in Colombia also included

manganese dioxide, a precursor used for the illicit manufacture of potassium permanganate, with seizures totalling more than 2 tons in 10 incidents, as well as almost 62 tons of calcium chloride, a drying agent used as part of the process of solvent recycling. Finally, Colombia also reported seizures of more than 50 tons of sodium metabisulfite, a reducing agent used as part of the reoxidation step of cocaine base to homogenize the oxidation level of cocaine base from different sources prior to its oxidation with potassium permanganate.

177. A seizure of 25 kg of sodium metabisulfite was reported by the authorities of Ecuador. The substance, in addition to quantities of methyl ethyl ketone, activated carbon, hydrochloric and sulphuric acid and several other chemicals, was seized from two clandestine laboratories engaged in the purification/refining of coca paste that was smuggled into the country from other countries of the region, in particular Peru. Incidents involving sodium metabisulfite continued in 2014, with three incidents communicated via PICS: two incidents in Bolivia (Plurinational State of) and one in Honduras.

178. Significant amounts of non-scheduled chemicals that could be used in the illicit manufacture of cocaine were also reported by Peruvian authorities, including almost 10 tons of ammonia, 43 tons of urea, almost 620 tons of calcium hydroxide and 370 tons of calcium oxide. Other large-scale seizures in Peru involved solvents.

179. Incidents involving Table II solvents and acids and non-scheduled chemicals used for illicit cocaine processing have also been communicated through PICS.

C. Substances used in the illicit manufacture of heroin

1. Acetic anhydride

180. Acetic anhydride is used to convert morphine, extracted from opium poppy, into heroin. It is also required in the illicit manufacture of methamphetamine or amphetamine in instances when P-2-P is illicitly derived from phenylacetic acid or phenylacetic acid esters (see annex IV). Each year, 400,000-1.1 million litres of acetic anhydride are used to illicitly manufacture heroin. Seizures of acetic anhydride in Mexico and neighbouring countries appear to be largely related to the use of P-2-P in the illicit manufacture of methamphetamine. However, the increased seizures of acetic anhydride may also be attributed to increased heroin manufacture, as levels of illicit opium poppy cultivation are increasing in the country, and Mexico is currently a major source country for heroin in the Americas. The Board has estimated that less than 17 per

³⁸ Ibid.

cent of the acetic anhydride diverted for use in illicit heroin manufacture is seized each year.³⁹

Licit trade

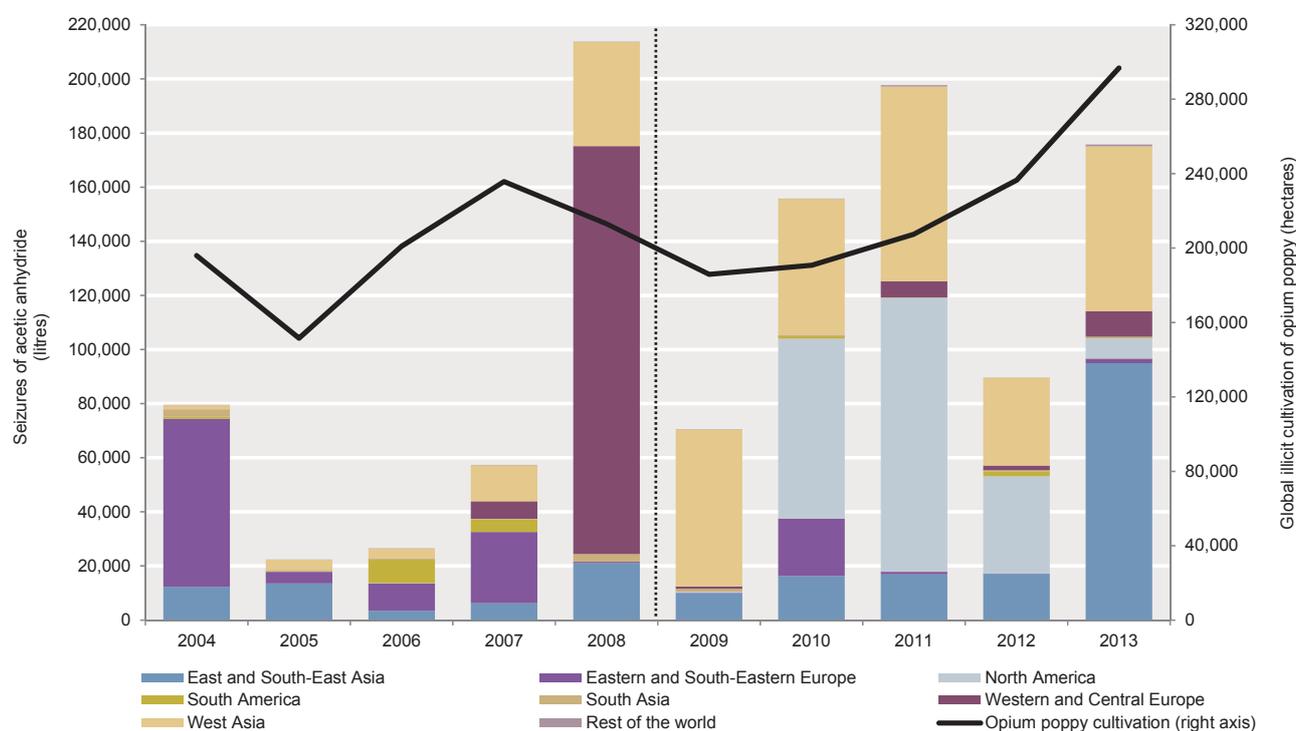
181. Acetic anhydride is one of the most frequently traded substances in Table I of the 1988 Convention. During the reporting period, authorities of 28 exporting countries and territories used the PEN Online system to provide over 1,523 pre-export notifications for shipments of acetic anhydride. The shipments were destined for 86 importing countries and territories and involved a total of 364 million litres of acetic anhydride.

182. The Board has previously expressed concern about insufficient and inconsistent information about the magnitude and patterns of legitimate trade in acetic anhydride.⁴⁰ Operation Eagle Eye (see paras. 69-70 above) has shed some light on the situation in participating countries. However, the Board continues to believe that the licit domestic trade in various countries is the primary source of the acetic anhydride that is diverted and subsequently smuggled into Afghanistan.

To address existing weaknesses, the Board re-emphasizes its view that authorities ensure that all companies manufacturing acetic anhydride on their territory are registered and included in the required reporting regardless of whether they manufacture the substance for their own use or for trade, because any level of manufacture, as well as any level of trade, constitutes a potential source of diversion. Governments of countries in which acetic anhydride and other scheduled substances are manufactured should report accurate, complete and up-to-date details of such manufacture through the established communication channels.⁴¹

183. In July 2014, a shipment of 2,200 litres of acetic anhydride sent from Spain to Iraq was stopped after it was confirmed that no import authorization had been issued by the competent national authority of Iraq. The Iraqi authorities informed the Board that the alleged importer was unknown to the Ministry of Health and was not authorized to import that substance. The modus operandi was very similar to previous cases involving Spain as a supplier.

Figure XV. Global seizures of acetic anhydride, by region, and illicit cultivation of opium poppy, 2004-2013



³⁹ *Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances: Report of the International Narcotics Control Board for 2012*, para. 106.

⁴⁰ *Ibid.*, para. 109.

⁴¹ Annual report questionnaire.

184. Between 2008 and 2013, pre-export notifications for some 890,000 litres of acetic anhydride in 39 shipments were communicated to Iraq. Of those, 21 shipments amounting to 214,000 litres were confirmed by the Iraqi authorities. Seventeen shipments (664,000 litres) were either stopped or suspended in the exporting countries, namely China, Germany, Iran (Islamic Republic of), Spain, the United Arab Emirates, the United Kingdom and the United States. Investigations indicated that several importing companies were fictitious, and the legitimacy of importing companies still has to be confirmed by the competent authorities in Iraq. Another conclusion is that traffickers have been misusing the name of a legitimate company in Iraq to source the substance. Joint investigations are being carried out by exporting, transiting and importing countries to identify the points of diversion.

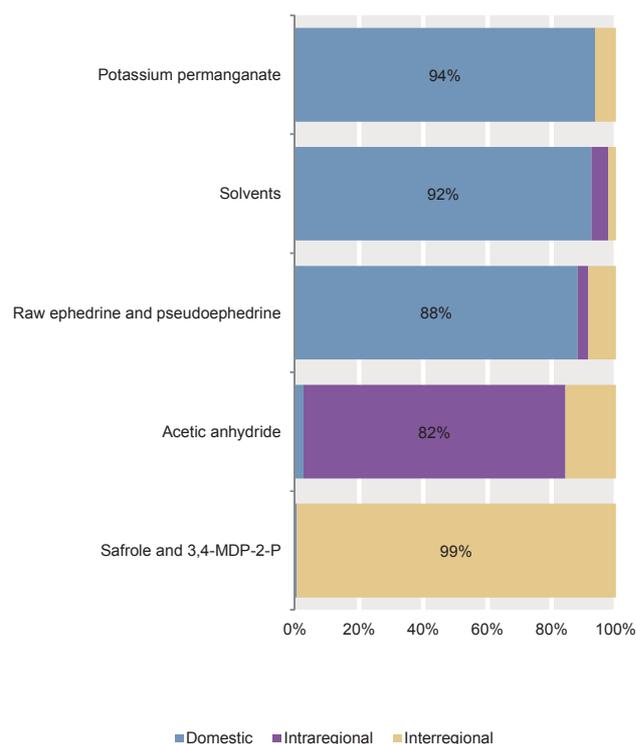
Trafficking

185. Based on available data, since 2009, global seizures of acetic anhydride were, on average, significantly higher than in the previous five-year period. However, that might be attributable to some extent to the improved coverage of reporting by countries through form D. While cultivation of opium poppy and illicit heroin manufacture, which generate much of the illicit demand for acetic anhydride, are concentrated in West Asia, South-East Asia and Latin America, significant seizures of acetic anhydride continue to be made outside those regions, reflecting the complexity of diversion patterns and smuggling routes, as well as the fact that acetic anhydride is also used in the illicit manufacture of P-2-P and, subsequently, methamphetamine from non-scheduled pre-precursors. Nevertheless, significant quantities are seized in Afghanistan and surrounding countries. Since 2009, West Asia has consistently accounted for approximately one third or more of global acetic anhydride seizures.

186. The comparison of the two five-year periods also illustrates a decline in the relative proportion of seizures made in Europe and an increase in the proportion of seizures in North America (see figure XV), likely related to the shift towards the use of non-scheduled esters of phenylacetic acid in the illicit manufacture of methamphetamine. Seizures in East and South-East Asia have been at comparable levels over the 10-year period, with the exception of 2013, when seizures in China were five times the amount of previous years. Based on the available data provided in form D on the origin of seized precursors (i.e., the last traceable country) for the period 2009-2013, approximately half of seizure cases of acetic anhydride were reported to have originated in the same country where the seizure was made, placing acetic anhydride in line with other precursors, especially in view of the correspondence with the extent of international licit trade (see figure V above). However, in terms of quantity seized, such seizures accounted

for only a small proportion of the total. The vast majority of seized acetic anhydride was traced by the reporting Governments to other countries within the same region, a statistic largely due to seizure amounts in West Asia (see figure XVI), possibly reflecting the importance of cross-border smuggling of large consignments in the region.

Figure XVI. Breakdown of seizures, by weight or volume, of selected precursors by type of reported origin, 2009-2013 (Percentage)



187. Nineteen countries and territories used form D to report seizures of acetic anhydride for 2013. Seizures during the year amounted to 176,000 litres. Since November 2013, nine incidents involving acetic anhydride were communicated via PICS (some of which related to seizures that may have already been included in the aggregate totals for 2013).

188. In 2013, countries in Western and Central Europe reported (in aggregate) the largest amount of acetic anhydride seizures since 2008. While this was mainly due to the quantity seized by Spain (9,497 litres), small quantities were also seized by Austria (for the first time since 2008), Estonia (for the first time since 2007) and Poland (which had seized a significant quantity, 1,755 litres, in 2012). Spain also seized one laboratory manufacturing heroin hydrochloride during 2013, as well as two sites where equipment or chemicals used in connection with heroin manufacture were stored. In addition, Spanish authorities dismantled a second laboratory in February 2014,

seizing 27.3 kg of morphine and 8.5 kg of heroin, together with reagents such as sodium carbonate and calcium hydroxide (in addition to acetic anhydride). Turkey reported seizures of 14,672 litres of acetic anhydride in 2013, the vast majority of which was seized in a single case of cross-border smuggling by land; the substance had been diverted in Hungary.

189. In West Asia, seizures of acetic anhydride reached almost 61,000 litres in 2013. Afghanistan reported 20 seizures of acetic anhydride in 2013, amounting to a total of 14,200 litres. Of those seizures, 17 cases were reported to have originated in the Islamic Republic of Iran and 3 in Pakistan. Pakistan reported seizures of 15,480 litres in 2013, of which 15,000 litres were seized in one case in Islamabad.

190. Acetic anhydride continues to be used extensively in the manufacture of heroin in Afghanistan. Depending on the perceived quality of the product, the average price of acetic anhydride on the illicit market in the country varied between \$106 and \$258 over the first 10 months of 2014—overall, significantly lower than in the peak years of 2008-2010 (see figure XVII). Those prices suggest that the accessibility of this substance for illicit purposes is now greater than in those peak years. Nevertheless, the higher price for acetic anhydride in Afghanistan compared with the international licit market confirms that illicit demand for acetic anhydride in Afghanistan remains strong.

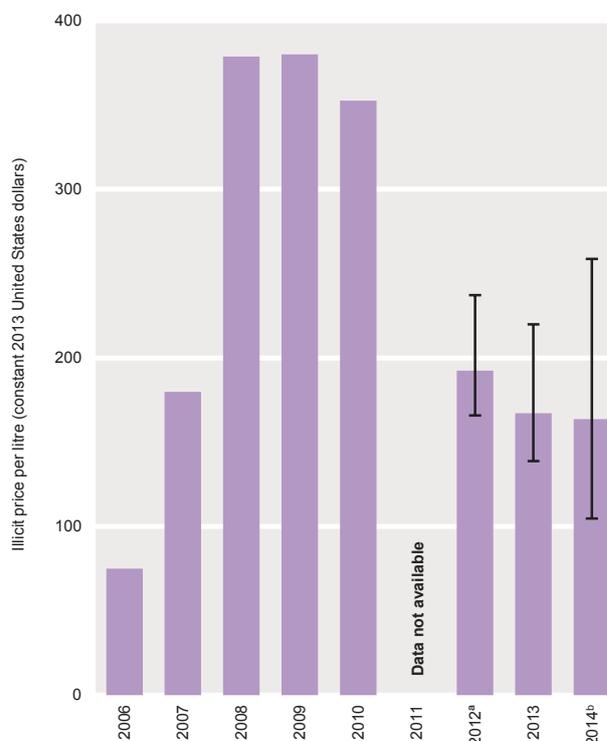
191. In June 2013, Iranian authorities seized a consignment of 16,500 litres of acetic anhydride at a checkpoint at the border with Afghanistan,⁴² presumably the intended final destination. The consignment was traced to China. The Chinese and Iranian Governments subsequently cooperated in the exchange of information and engaged in discussions to combat the diversion of and trafficking in precursors. China reported seizures of almost 95,000 litres of acetic anhydride in 2013, more than five times the level reported in each of the three preceding years. This includes, among other seizures, a large quantity seized in the course of an investigation into acetic anhydride trafficking destined for West Asia, presumably intended for heroin manufacture.

192. Acetic anhydride is also seized in connection with the manufacture of methamphetamine. In May 2014, authorities in Guatemala seized 27,064 litres of acetic anhydride, together with other chemicals which suggest a connection with methamphetamine manufacture. Acetic anhydride seizures in Mexico fell from 35,000 litres in 2012 to 7,600 litres in 2013.

193. Aside from countries mentioned above, seizures of acetic anhydride in 2013 were also reported by Ukraine (1,664 litres), Belize (660 litres), Brazil (249 litres), India

(242 litres), the Russian Federation (8 litres), Canada (4 litres) and Peru, New Zealand and Armenia (less than 1 litre each).

Figure XVII. Price of acetic anhydride on the black market in Afghanistan, 2006-2014
(Constant 2013 United States dollars)



Notes: Values represent unweighted average of all samples. Error bars represent the average illicit price range based on perceived quality of the acetic anhydride, which were collected and reported beginning as of March 2012.

^a Data for 2012 are for the period from March to December.

^b Data for 2014 are for the period from January to October.

2. Use of non-scheduled substances and other trends in the illicit manufacture of heroin

194. Aside from Afghanistan, current estimates by UNODC indicate that Myanmar is the country with the second largest area under illicit cultivation of opium poppy and the second largest production of opium. In spite of the fact that much of that opium is processed into morphine and, subsequently, heroin, there is little evidence of recent acetic anhydride seizures made in connection with heroin manufacture. However, in 2013, Thailand made three seizures of sodium carbonate, totalling 1,160 kg, seized in areas near the border with Myanmar. In 2012, Thailand seized 2,840 kg of the same substance, also close to the border with Myanmar.

195. Glacial acetic acid is not under international control but is included in the INCB limited international special

⁴² Islamic Republic of Iran, Drug Control Headquarters, *Drug Control in 2013*, pp. 34, 39-40.

surveillance list because of its possible direct use in heroin laboratories and as a cover load to conceal contraband acetic anhydride. In the framework of Operation Eagle Eye, the Afghan authorities confirmed that acetic acid was found to be used in heroin laboratories in their country, mixed at various ratios with acetic anhydride. In 2013, jerry cans labelled as acetic acid were found during an investigation related to a seizure of another non-scheduled substance in Afghanistan. In December 2013, the Government of Afghanistan added acetic acid, as well as acetyl chloride, ammonium chloride and calcium carbonate to national control.

196. Ammonium chloride is a non-scheduled substance commonly used as part of the extraction of morphine from opium. In recent years, reports of ammonium chloride seizures have become more frequent. With regard to the 2013 reporting cycle, two countries reported on form D seizures of ammonium chloride: Afghanistan (almost 5.8 tons) and Mexico (more than 520 kg). Mexico also reported seizures of acetic acid (470 litres).

D. Substances used in the illicit manufacture of other narcotic drugs and psychotropic substances

1. Ergot alkaloids and lysergic acid

Licit trade

197. Ergot alkaloids (ergometrine and ergotamine and their salts) are used in the treatment of migraines and as an oxytocic in obstetrics, but there is comparatively limited international trade in those substances. During the reporting period, 17 countries sent pre-export notifications for 337 exports of ergot alkaloids, totalling 145 kg, to 53 importing countries. In addition, there were three shipments of lysergic acid, totalling 0.5 kg.

Trafficking

198. In the period 2004-2013, seizures of ergot alkaloids were recorded in nine countries and territories. Among them, three countries—Australia, China and Spain—reported seizures of ergotamine on form D for 2013. In addition, Australia seized a very small quantity of ergometrine—the only country to report seizures of this substance in 2013. In all instances, the quantities seized were below 1 kg.

199. Limited quantities of lysergic acid seizures (none in excess of 1 kg) were recorded in seven countries and territories in the period 2004-2013. With respect to the 2013 reporting cycle, only two countries reported such seizures. Following an unusually large quantity (in relative terms) seized in 2012, Australian authorities reported a comparable

quantity (523 grams) seized in 2013, in a total of 249 cases: the lysergic acid originated in Canada (156 cases), the Netherlands (50 cases) and Spain (43 cases). The only other country to report seizures of lysergic acid in 2013 was the Russian Federation (83 grams).

2. *N*-Acetylanthranilic acid and anthranilic acid

Licit trade

200. *N*-Acetylanthranilic acid and anthranilic acid can be used in the illicit manufacture of methaqualone, a sedative-hypnotic with a history of illicit use particularly in parts of Africa. During the reporting period, two exporting countries sent pre-export notification for two shipments of *N*-acetylanthranilic acid, totalling slightly more than 1 kg, to two importing countries. In addition, there were 277 shipments of anthranilic acid totalling 1,120 tons during the reporting period.

Trafficking

201. Reports of seizures of *N*-acetylanthranilic acid or anthranilic acid, which have always been infrequent, have become increasingly sporadic since 2009. In the period 2004-2013, a total of 15 countries and territories reported seizures of either of those substances; among them, 10 countries and territories made such seizures at least once in the period 2004-2008, and only 6 of them in the period 2009-2013. China reported to have seized a very large quantity—almost 500 tons—of anthranilic acid in 2013; the only other reports on form D of seizures of either of those substances in 2013 were of 6.5 litres of *N*-acetylanthranilic acid seized in Qatar and of a small quantity (less than 1 kg) of *N*-acetylanthranilic acid seized in Poland.

202. In June 2014, an alleged large-scale methaqualone laboratory was dismantled in the greater Durban area in South Africa. The Board understands that anthranilic acid, possibly diverted from local sources, was found at the site. No further information was provided, and investigations are ongoing. Illicit methaqualone manufacture, locally known as Mandrax, has been reported by South Africa in the past.

E. Substances used in the manufacture of non-scheduled substances of abuse

203. Governments have used form D also to report seizures of a variety of chemicals that can be used in the manufacture of non-scheduled substances of abuse, including new psychoactive substances. In addition to reports about chemicals used in the synthesis of new psychoactive

substances, reported seizures mostly concerned *gamma*-butyrolactone (GBL) and precursors of ketamine.⁴³

204. GBL is abused as such, but it is also used as a precursor in the illicit manufacture of *gamma*-hydroxybutyric acid (GHB). Seizures of GBL were reported in 2013, mostly by European countries, namely Belgium (5.5 litres), Estonia (81 litres in 13 incidents, allegedly originating in the Netherlands and Poland), Finland (more than 360 litres in 40 incidents), Greece (more than 1,600 litres, 1 seizure), Hungary (6.3 litres), Latvia (5.6 litres in 5 seizures) and Sweden (55 litres in 3 incidents). The Netherlands reported the largest seizures: almost 50,000 litres in six incidents. GBL laboratories were reported by the Russian Federation, with seizures of the substance amounting to more than 400 kg. Outside Europe, only the United States reported having seized GBL: a total of 285 litres. Australia reported having seized almost 9 kg of 1,4-butanediol, another precursor of GHB. In addition, GBL seizures continued to be communicated via PICS in 2014; the amounts were usually small, with the exception of the Netherlands, which communicated a seizure of 1,000 litres in February 2014.

205. China continued to report seizures of an immediate precursor of ketamine, known by its common name: “hydroxylimine”. In 2013, nearly 8 tons of that chemical were reported seized, almost double the amount reported seized in 2012. “Hydroxylimine” has been under national control in China since mid-2008.

206. Malaysia reported a seizure of *N*-isopropylbenzylamine, which may be used to cut crystalline methamphetamine (“ice”) as it looks very similar to the drug.

V. Conclusions

207. The Board’s reports on precursors are aimed at providing Governments with a comprehensive overview and analysis of the precursor control situation worldwide, together with observations and recommendations to prevent the diversion of chemicals into illicit trafficking and address the latest challenges. The present chapter builds on the Board’s analysis in chapter II aiming to inform Governments and the Commission on Narcotic Drugs in their preparations for the special session of the General Assembly in 2016.

208. The enforcement of laws on precursors is an important complement as the existing control system, namely its regulatory component, has a limited ability to deal with series of chemically related substances and with substances without legitimate use and/or trade: the approach to scheduling is on a

substance-by-substance basis. That is, it requires the listing of individual substances by name; and the concept of diversion control, grounded in preventing the diversion from licit into illicit channels through monitoring national and international trade, requires that substances have at least some legitimate use and there is trade in them. Since increasingly often, neither of those conditions is met by the designer precursors, derivatives and intermediates that have recently emerged, it has become important to consider approaches that allow intervention in case of suspicion, without requiring the application of all regulatory control measures that might overburden authorities and industry alike. Concepts such as that known as “immediate precursors”, or the reversal of the burden of proof, which are concepts that are to some extent also being discussed in connection with new psychoactive substances, would allow for the necessary refocusing of controls.

209. Moreover, approaches that no longer rely on the naming of individual substances would also prepare the international precursor control system for the challenges soon to arrive in connection with the precursors of new psychoactive substances. While some of these chemicals are critical for entire series of related new psychoactive substances, other chemicals are quite specific for individual new psychoactive substances and often have a range of legitimate applications and/or significant trade volumes. Applying the control measures of the 1988 Convention would overburden the system in a similar manner as is currently observed in relation to the new psychoactive substances end-products and their scheduling under the international drug conventions.

210. Solutions have been identified, and practical tools are available. However, it is a matter of political will to accept that diversion can, and does, happen at all stages of the distribution chain and that there is a shared responsibility to ensure that domestic control systems, which represent individual building blocks of an interdependent global precursor control system, are fit for their purpose. This includes all countries in which chemicals are either manufactured, domestically distributed, used, imported, exported, re-exported and countries through which those chemicals transit: in other words, virtually every country around the globe. It is also a matter of political will to balance the free movement of goods and control considerations. Above all, the ultimate goal of precursor control remains effective diversion prevention, while seizures are, in fact, only indicators of known diversions that have been successful.

211. The Board hopes that the special session of the General Assembly to be held in 2016 will provide the opportunity to achieve the necessary consensus, at the highest level, to make international precursor control fit for 2019 and beyond, and the Board expresses its willingness to fully take part in that endeavour.

⁴³ GBL and 1,4-butanediol were reviewed by the World Health Organization Expert Committee on Drug Dependence in June 2014, for possible international control.